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on June 19, 2002

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Date of  
Signature

**PATENT**  
#01-0165-UNI  
Case #F7580(V)



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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Van Boom et al.  
Serial No.: 10/025,295  
Filed: December 19, 2001  
For: METHOD FOR FLAVORING AN OLIVE OIL

Edgewater, New Jersey 07020  
June 10, 2002

**SUBMISSION OF PRIORITY DOCUMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

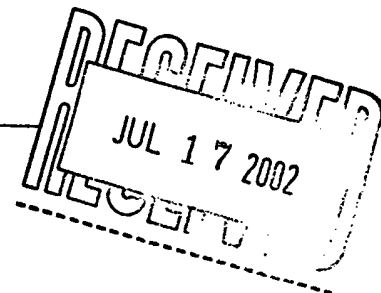
Sir:

Pursuant to rule 55(b) of the Rules of Practice in Patent Cases, Applicant(s) is/are submitting herewith a certified copy of the European Application No. 00204713.2 filed December 22, 2000, upon which the claim for priority under 35 U.S.C. § 119 was made in the United States.

It is respectfully requested that the priority document be made part of the file history.

Respectfully submitted,

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The attached documents  
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European patent application  
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Les documents fixés à  
cette attestation sont  
conformes à la version  
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la demande de brevet  
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page suivante.

Patentanmeldung Nr.    Patent application No.    Demande de brevet n°

00204713.2

Der Präsident des Europäischen Patentamts;  
Im Auftrag

For the President of the European Patent Office

Le Président de l'Office européen des brevets  
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**Blatt 2 der Bescheinigung**  
**Sheet 2 of the certificate**  
**Page 2 de l'attestation**

Anmeldung Nr.:  
Application no.: 00204713.2  
Demande n°:

Anmeldetag:  
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Anmelder:  
Applicant(s):  
Demandeur(s):  
UNILEVER N. V.  
3013 AL Rotterdam  
NETHERLANDS

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Method for flavoring an olive oil

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IPO - DG 1

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**Method for flavoring an olive oil**

(12)

The present invention relates to a method of preparing a flavored olive oil and to the flavored olive oil obtained therewith. Flavored oils are convenient means to flavor foods and are useful as condiments or cooking ingredients. For example, an oil flavored with onion can be used for frying. Another use is as a means to flavor meals, such as pasta, meat, fish, salads etc. or as a basis for a marinade.

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In the prior art many ways of flavoring oils are provided. One of the basic methods is the addition of the flavoring agent to the oil and leaving the oil to stand for a certain amount of time. In this way oils flavored with herbs, such as rosemary are prepared. A drawback of this method is that it can take a relatively long time for the oil to absorb the flavor. Also, the flavoring ingredients added will often remain in the oil, which is not desirable for some applications. Another drawback is that this extraction method does not yield an optimal flavor profile.

It is also possible to add synthetic flavors or natural flavor extracts to an oil. However, the addition of a synthetic flavor is not very much appreciated by consumers, who prefer a naturally flavored product. Using extracts to flavor the oil is generally not very economical, as processes to prepare extracts can be complicated.

A further method of flavoring an oil is described in US 5,320,862. According to this method a vegetable or nut oil is contacted with a garlic or onion flavoring agent in a particulate form at a temperature between 100 and 200 °C. A drawback of this method is that the oil is heated, which can

result in a change in taste and flavor of the oil and a reduction in oil quality.

The present invention now offers a method for flavoring an olive oil, resulting in oils with an excellent taste and flavor profile. Another advantage of the present invention is that the oil obtained has a high flavor stability since the in-situ extraction method of crushing the flavoring ingredients (and in that way activating flavor generation) followed by immediate absorption into the oil offers the possibility to isolate characteristic flavor compounds that are either not generated or are unstable under different isolation conditions. Further, the oil has better anti-oxidant activity and the oil obtained is clear.

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The present invention provides a process for flavoring an olive oil, comprising the steps of:

- mixing olives with one or more flavoring ingredients;
- subjecting the mixture to a crushing and malaxation treatment
- 20 obtaining a malaxation mash;
- separating the malaxation mash into a flavored olive oil and a residue;
- collecting the flavored olive oil.

25 The present process applies the conventional process steps for preparing an olive oil but mixes the flavoring ingredient with the starting olives. In this manner the flavor from the flavoring ingredients is very well absorbed into the oil and the residue of the flavoring ingredient will be separated from

30 the oil together with the olive residue. Thus, the process results in a clear olive oil.

The process of the invention can further include the steps of preparing the olives for the process by removal of olive leaves and washing of the olives. The step of separating the oil from the malaxation mash can be carried out by decanting and/or  
5 centrifugation which are conventional steps in the olive oil production process.

Generally, the mixture will be subjected to crushing and malaxation at a temperature of 10 °C to 50 °C.

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According to a further aspect of the invention the process is applied with an existing (olive) oil. This process comprises the step of

- mixing an oil with one or more flavoring ingredients;
- 15 - subjecting the mixture to a crushing and malaxation step;
- separating the flavored oil from the residual flavoring ingredients;
- collecting the flavored oil.

The oil used in this process can be any vegetable or animal oil  
20 suitable for consumption, but is preferably an olive oil.

The flavoring ingredients according to the invention are preferably foodstuffs, in particular natural foodstuffs. The following groups of foodstuffs can be used as the flavoring  
25 ingredient:

1. Herbs, in particular oregano, basil, thyme, coriander, dill, rosemary, sage, parsley and estragon.
2. Garlic and/or onion.
3. Spices, in particular pepper, cloves, nutmeg and ginger.
- 30 4. Mushrooms, in particular truffles.
5. Nuts, in particular almonds, hazel nuts and pine nuts.
6. Fruits, in particular apples and banana's.

7. Vegetables, in particular paprika's, tomatoes, dried tomatoes.

A further flavoring ingredient that can also be used according to the invention is grass.

The flavoring agent is added to the olives in an amount of 0.1 % to 200 % in relation to the total weight of the olives or the oil.

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According to a further embodiment of the invention the olives are mixed with herbs that have a flavor profile that can increase the concentration of a number of flavor compounds characteristic for olive oil. This offers a relatively simple method to enrich the olive oil flavor. The flavor profile of the olive oil with and without the flavoring ingredient can be determined by degassing of the resulting oil under high vacuum followed by analysis of the resulting extract by gas chromatography. Preferred additives for improving the flavor profile of olive oil are apple, banana or grass.

The olive oil obtained can be used in the preparation of food products, such as spreads, salad dressings and sauces. It is also possible to mix the olive oil with another edible oil, to improve the taste thereof. The other edible oil can be a neutrally tasting vegetable oil such as sunflower oil, rape seed oil, corn oil etc. but can also be an olive oil, such as a refined olive oil.

#### 30 **Example 1**

To olives 14%-w/w onions were added. This mixture was crushed in a lab scale hammer crusher. The resulting paste was malaxed for 30 minutes at room temperature. The oil was separated from

the water and solid phases by centrifugation (at 3500 rpm for 2 minutes). This oil had an induction time of 9.8h. The flavor profile was characterized by degassing the oil and analyzing the resulting extract by gas chromatography. Flavor compounds 5 were characterized using mass spectrometry.

### Example 2

To olives 10%-w/w garlic was added. This mixture was crushed in a lab scale hammer crusher. The resulting paste was malaxed for 10 30 minutes at room temperature. The oil was separated from the water and solid phases by centrifugation (at 3500 rpm for 2 minutes). This oil had an induction time of 11.8h. The flavor profile was characterized by degassing the oil and analyzing the resulting extract by gas chromatography. Flavor compounds 15 were characterized using mass spectrometry.

### Example 3

To olives 0.9%-w/w cloves were added. This mixture was crushed in a lab scale hammer crusher. The resulting paste was malaxed 20 for 30 minutes at room temperature. The oil was separated from the water and solid phases by centrifugation (at 3500 rpm for 2 minutes). This oil had an induction time of 9.8h. The flavor profile was characterized by degassing the oil and analyzing the resulting extract by gas chromatography. Flavor compounds 25 were characterized using mass spectrometry.



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**Claims**

1. A process for flavoring an olive oil, comprising the steps of:

- mixing olives with one or more flavoring ingredients;
- subjecting the mixture to a crushing and malaxation treatment obtaining a malaxation mash;
- separating the malaxation mash into a flavored olive oil and a residue;
- collecting the flavored olive oil.

2. A process according to claim 1, wherein the one or more flavoring ingredients are foodstuffs.

3. A process according to claim 2, wherein the one or more flavoring ingredients are selected from green herbs, garlic, onion, spices, mushrooms, nuts, fruits and vegetables.

4. A process according to claim 3, wherein the green herbs are selected from the group consisting of oregano, basil, thyme, coriander, dill, rosemary, sage, parsley and estragon.

5. A process according to claim 2, wherein the spices are selected from the group consisting of pepper, cloves, nutmeg and ginger.

6. A process according to claim 2, wherein the mushrooms are selected from truffles.

7. A process according to claim 2, wherein the nuts are selected from the group consisting of almonds, hazel nuts and pine nuts.
8. A process according to claim 2, wherein the fruits are selected from the group consisting of banana's and apples.
9. A process according to claim 2, wherein the vegetables are selected from the group consisting of paprika's, tomatoes and dried tomatoes.
10. A process according to claim 1, wherein the flavoring ingredient is grass.
11. A process for flavoring an oil, comprising the steps of
- mixing an oil with one or more flavoring ingredients;
  - subjecting the mixture to a crushing and malaxation step;
  - separating the flavored oil from the residual flavoring ingredients;
  - collecting the flavored oil.

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**Abstract**

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A process for flavoring an oil, comprising the steps of

- mixing an oil with one or more flavoring ingredients;
- subjecting the mixture to a crushing and malaxation step;
- separating the flavored oil from the residual flavoring ingredients;

collecting the flavored oil.